

HPH

Public Health

HPH 500: Contemporary Issues in Public Health

This course provides an introduction to the field of public health that aims to develop an appreciation of the unique and important mission of public health; an understanding of the history, values, ethics, mission, and goals of public health; and knowledge about how public health functions today including the organization, financing, policies, and practices of public health. Students will be expected to think critically about whether public health has achieved its mission in today's world and how the profession might develop in the future. Prerequisite: Admission to Graduate Public Health Program or Department Consent.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 501: Introduction to the Research Process

This course provides an overview of the research process including formulation of a research problem, conceptualization of the research design, construction of the instrument for data collection, selection of a sample, collection of data, and writing a research report. Topics include how to identify a research question and, correspondingly, how to formulate a clear, concise hypothesis or set of hypotheses; reasons and procedures for reviewing the literature; overview of observational and interventional research designs; review of measurement theory, types of scales, and commonly used measures in public health-related research; data collection methods including survey and qualitative methods; and the ethical conduct of research. Through the introduction of these topics, the course provides a general background for individuals who are interested in learning the fundamentals of how to prepare a research proposal. Prerequisite: Admission to Graduate Public Health Program or Department Consent.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 506: Biostatistics I

This is the first of a sequence of two-semester courses with the aim to provide students and researchers in public health with an introduction to the principles of public health informatics and statistical methods with their application in biomedical and public health research. The course will provide necessary knowledge and skills to perform various data management tasks to create and manage data sets using SAS with basic

proficiency. The course will also introduce summarizing and exploring data, probability theory, discrete and continuous probability distributions, populations and samples, sampling distributions and statistical inference, hypothesis testing, one-sample and two-sample comparisons.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 507: Biostatistics II

"This is the second of the two-semester courses intended to provide students and researchers in public health with an introduction to the principles of public health informatics and statistical methods and their application in biomedical and public health research. The course will provide necessary knowledge and skills to perform various data management tasks to create and manage data sets using SAS with intermediate proficiency. The course builds upon the foundations of its prerequisite, Biostatistics I, with progressively more advanced instruction in analysis of variance, association and correlation, linear regression, and logistic regression. Prerequisite: HPH 506

3 credits, Letter graded (A, A-, B+, etc.)

HPH 508: Health Systems Performance

This course introduces students to the system that we have developed to deliver health care in the United States, with international comparisons. The topics include the organization and financing of health care systems, access to health care including health insurance, regulation and policy issues, and the health care workforce. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 510: Infectious Disease Epidemiology

This course is an introduction to the characteristics of infectious disease and dynamics of transmission. Major goals of the course are for students to understand the theoretical basis of pathogen transmission; to identify factors that determine patterns of disease spread within populations; and to identify populations at risk. The course will demonstrate how an understanding of epidemiological characteristics facilitates disease prevention and control, with broader implications for public health.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 514: Epidemiology for Public Health

This course presents basic epidemiologic concepts used to study health and disease in populations. It provides an overview of

the major causes of morbidity and mortality, including methods of measurement (e.g., incidence, prevalence). Observational and experimental epidemiologic studies will be described and their advantages and disadvantages compared. The course aims for students to begin developing the skills needed to evaluate data, interpret reports, design, and conduct studies. Students will be introduced to the various areas of epidemiologic studies, including cancer, molecular/genetic, environmental, occupational, social and behavioral, and infectious disease surveillance. The course comprises both lectures and small group seminars for in-depth discussions of previously assigned topics. Prerequisites: Admission to Graduate Public Health Program or Department Consent; HPH 506.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 516: Environmental and Occupational Health

This course is designed to provide the fundamentals of environmental and occupational health and to educate students on issues related to major environmental and occupational concerns. It will provide a forum for the discussion of local and national environmental and occupational public health issues. The content of the course will focus on major pollutants, their detection, impact on health, and principles of remediation. Using various teaching techniques, students will be exposed to current environmental and occupational topics and approaches to prevention and treatment. The course will emphasize the most recent research in the field. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 519: Independent Study

Intensive reading, under supervision of one or more instructors, of material not covered in the formal curriculum, or execution of a research project under the supervision of one or more faculty members. Permission of MPH Academic Coordinator is required. Prerequisite: Admission to Graduate Public Health Program or Department Consent

0-6 credits, Letter graded (A, A-, B+, etc.)

May be repeated 5 times FOR credit.

HPH 521: Introduction to Clinical Research

This introductory seminar series provides a broad-based overview of clinical science research methods, as well as guidance for critically reviewing the peer-reviewed literature. Class lectures, exercises, and interactive small group sessions will cover framing a research question, formulating a

research hypothesis, critically appraising the literature, exploring study design options, conducting research ethically and responsibly, selecting clinical outcomes, and evaluating analytical alternatives. Students enrolled in the Master of Public Health degree program can not use this course (earn credit) to their degree requirements.

*1 credit, Letter graded (A, A-, B+, etc.)
May be repeated 3 times FOR credit.*

HPH 522: Race, Racism, and Health

This course introduces students to race and racism as a determinants of health. We explore the historical notions of race, how race impacts health, and how racism impacts the health of different populations. Also covered is how race and discrimination are measured, critical race theory and public health interventions to address racial disparities. Some background in statistics and research methods is required in order to fully understand the course material.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 523: Social and Behavioral Determinants of Health

This course introduces students to population health as one of the organizing concepts in public health and the orientation that differentiates public health from medicine. Consistent with public health tradition, health is discussed from an ecological perspective, and the course presents current knowledge about the multiple determinants of population health including socioeconomic status, the physical environment, medical care, individual behavior, and genetics and the interaction of these factors. Also covered is the measurement of population health, sources of data and methods for assessing population health improvements. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 525: Fundamentals of Program Planning

This course introduces students to the scope of public health program planning and analysis. This includes the major health behavior theories that are used in population health research and practice, public health program planning and budgeting, and public health program evaluation.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 532: Chronic Diseases

This course will cover substantive and methodological issues in the epidemiology of chronic diseases, including cancer, and cardiovascular, chronic respiratory and

neurodegenerative diseases. Students will be presented with examples of descriptive and analytical epidemiology studies in each of these areas; aspects such as disease registration and its contribution to epidemiology research, estimates of attributable fractions, and preventive strategies will be also addressed. The course will include considerations about causality for chronic diseases, including issues of validity in epidemiology studies as well as integration of evidence across studies and disciplines.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 534: Spatial Analysis: Health Applications

This course is an intermediate level graduate course in the application of spatial methods for analyzing environmental exposure and disease data. Students with backgrounds in epidemiology, public health, environmental health, biostatistics, community health, biology, sociology, psychology, marine and atmospheric sciences, geosciences, demography, and geography are particularly encouraged to participate. Although the course will focus on examples related to human health, graduate students in other disciplines will find the course useful for specific and appropriately defined research purposes. Techniques for spatially analyzing point patterns and aggregated data in polygons will be introduced, including autocorrelation, clustering analysis, geostatistical smoothing, and approaches for spatial regression. Consideration of space-time variability will also be covered. This course includes theoretical elements so that the student will learn to appreciate strengths and weaknesses of different spatial approaches. Prior course in GIS or equivalent, as determined by consent from the instructor required. Students need a foundational knowledge of Geographic Information Systems (GIS) software. This requirement can be met by completing GSS 313: GIS Design and Application I (if available), by completing other Introduction to GIS courses at Stony Brook or elsewhere, or by self-teaching using the following book: *Getting to Know ArcGIS Desktop* by Tim Ormsby, Eileen Napoleon, and Robert Burke. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 535: Clinical and Community Preventive Medicine

This course prepares residents to transition from the role of learners to practitioners of preventive medicine. Didactic lectures emphasize clinical preventive medicine, which entails mastering the science of

preventive medicine practice, grounded in the evidence-based clinical preventive services guidelines as developed by the United States Preventive Services Task Force (USPSTF) [i.e. screenings, behavioral counseling, and chemoprophylaxis/preventive medications], while case-based simulated sessions provide an opportunity to become skilled in the art of preventive medicine practice, built upon the principles of lifestyle medicine, motivational intervention, brief action planning and other evidence-based strategies for health behavior change. The work of the preventive medicine physician in public health, referred to as community preventive medicine or community medicine, is also covered in this course, including the Community Preventive Services (CPSTF) guidelines, to help prepare residents for the medical practice of prevention in the public health domain. The role of the preventive medicine physician in the seamless integration and effective collaboration between clinical medicine and public health is emphasized where appropriate. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 542: Introduction to Global Health

This course will provide an introduction to the field of global health and challenge students to think about how a global perspective could enhance their future practice. The course is designed for MD and MPH students, and is open to students from related graduate programs with instructor permission. This course will explore core concepts in global health, including its definition and origin; how to measure the global burden of disease; recent progress and current challenges; social inequalities in health; health systems; and global stakeholders. It will also apply such concepts to major global health topics, with lectures focused on such areas as HIV/AIDS, child health and immunization, chronic disease epidemiology and sexual violence.

2 credits, S/F graded

HPH 549: Public Health Law

This course is a survey of legal and policy issues that have special relevance for public health professionals. Topics may vary, but typically will include many of the following: structure of the U.S. legal system; power of state governments in matters affecting health care; governmental power and the right to privacy; constitutional issues in social welfare benefits; governmental regulation of health care providers and payers; the scope and discretion of administrative agencies in health care; the antitrust laws; the fraud and abuse laws; and negligence in the delivery

and financing of health care. Prerequisite: Admission to Graduate Public Health Program. *3 credits, Letter graded (A, A-, B+, etc.)*

HPH 550: Theories of Health Behavior and Communication

In this survey theory course, students learn about the major health behavior and health communication theories that are used in population health research and practice. Rather than simply cataloguing each theory in turn, this course takes a constant, comparative, approach to the learning of theories, in which theories are dissected to their core elements and compared to each other in order to understand the points of convergence and divergence among them. The goal in taking this comparative approach is application: by knowing the core elements of various theories, students will more easily be able to choose appropriate theories to explain population health problems of interest and consider the design of interventions that are appropriate to achieve improvements in the educational, behavioral and environmental factors that may contribute to the problem. In addition to covering traditional individual-level behavior change and health communication theories, this course will focus on social change and systems theories, challenging students to think about the role of social context and systems on health behavior and health communication to achieve population health improvements. Finally, after learning about commonly-used theories in the field of public health, students will learn about and critique theories that are less-commonly used (such as new and emerging theories in the literature) and have important implications for future research, practice, and further theory development and testing among populations. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 551: Practice of Health Communications

This course provides an overview of health communication. The course will introduce theories concerning health communication, and build on such to provide practical approaches to interpersonal and organizational health communication, risk communication, and media campaigns. Students will learn to collect, organize, and convey information effectively to different audiences important to public health initiatives. Throughout, the course will emphasize how health literacy and cultural beliefs influence effective communication, and students will be challenged to develop communication tools (e.g., social marketing campaigns,

presentations, op-eds) optimized for a specific population. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 552: Planning and Implementing Community Health Initiatives

In this course, students learn how to develop theoretically-informed and evidence-based community health initiatives. Over the course of the semester, students work on developing their own culturally-competent community health initiatives, each of which is targeted at a particular population with a specific health need. Each student learns how to assess community needs and assets using a variety of methods, elaborate an initiative's theory of change through use of logic model, design theoretically-informed intervention activities appropriate to the needs/assets identified, create a budget and organizational structure, and engage key stakeholders at every facet of development and implementation of the community health initiative. Students work together in the same small group over the course of the semester to get/give feedback and hone their individual projects. Through this intense group work, students both (1) learn how to apply course concepts to several particular community health problems and (2) gain skills for working in teams on community health initiative planning and implementation. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 550.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 553: Advanced Evaluation of Community Health Initiatives

This course prepares students to plan, implement, and utilize an evaluation of a community health initiative. Basic principles and practices of evaluation are addressed, including identifying the goals of a community health initiative; designing an evaluation plan that can determine if the initiative's goals are achieved; implementing an evaluation plan; interacting with stakeholders; and using evaluation results to improve performance. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 525

3 credits, Letter graded (A, A-, B+, etc.)

HPH 554: Principles of Health Education & Promotion

This course aims to provide students with the historical, theoretical, and philosophical foundations of health education and promotion. Students will be given the tools to work with community and patient populations.

Students will be equipped with the knowledge, skills, and attitudes to raise people's health awareness, as well as the tools needed to teach people how to reduce their risk of disease and promote health. All students will be required to design a health education and promotion program using the knowledge and skills learned in the course. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 555: Global Health and Demography

This course introduces students to the basic theory and methods employed in the study of demography and global health. This course will provide an introduction to the field of global health and challenge students to think about how a global perspective could impact their future public health practice. The students will also learn about sources of demographic data, patterns in global fertility and mortality, and the demographic transition. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 559: Advanced Research Methods

This course will provide students with an in-depth review of principles of public health research methods. Emphasis will be placed on conceptualization of research questions, evaluation of research design, sample size, and issues related to potential threats to validity within a public/applied setting. Additionally, students will become familiar with how to evaluate methods used in published literature and to design their own research projects. Course topics will include how to obtain secondary data, sample size calculation, risk adjustment, bias, confounding, and interaction. The instructor will work with students as they develop their own analytic project proposals. Students will be expected to implement their proposed research in HPH 560 Advanced Biostatistics in the following semester. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 507 and HPH 501

3 credits, Letter graded (A, A-, B+, etc.)

HPH 560: Applied Biostatistics

Students learn to formulate a scientific question in terms of a statistical model, leading to objective and quantitative answers. Topics may include analysis of variance, regression, including details of data-analytic techniques and implications for study design, measures of association, 2x2 tables, stratification, matched pairs, logistic regression, model building, analysis of rates, and survival data analysis

using proportional hazards models. The course stresses applications in epidemiology, and other areas of public health research. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 507 and HPH 559.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 562: Population Health Analytics

The Population Health Analytics course provides students with the methodological and analytical skills required for competent evidence-based decision-making regarding population health improvement projects. Beginning with a review of current methods and an introduction to emerging methods for the generation and analysis of health data, such as precision medicine/big data, telemedicine/digital health, and spatial analysis/hotspotting, the course covers the major elements required for the evidence-based pursuit of population health goals. In particular, hands-on training is provided on how to synthesize evidence, via comprehensive systematic review methodologies, in the following 4 aspects of evidence-based decision-making: effectiveness, efficiency, feasibility, and appropriateness/meaningfulness. In addition, students will learn how to retrieve and summarize information about population health from major public health information systems in the U.S. Lectures and labs are aimed at developing hands-on skills for the management and analysis of health data using SPSS and other relevant statistical software programs, such as Open Meta Analyst (OMA) and the System for the Unified Management, Assessment and Review of Information (SUMARI). Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 501 and HPH 506

3 credits, Letter graded (A, A-, B+, etc.)

HPH 564: Qualitative Methods

In this course, students learn about the logic, theory, and methods of qualitative research within population health and related fields (e.g., social welfare, nursing, medicine, sociology, and psychology). The course begins with an introduction to the epistemological and ontological underpinnings of qualitative inquiry, with special attention to how these factors affect the types of research questions often asked (and answered) by qualitative researchers. Students then learn the nuts-and-bolts of qualitative research design and data collection through review of existing qualitative studies and hands-on application. Homework and in-class exercises over the course of the semester give students practice

in (a) designing a feasible qualitative research study, and (b) collecting three kinds of qualitative data: participant observation, in-depth interviews, and focus groups. The course concludes with an overview of steps for data analysis, including coding, memo-writing, and triangulation. Emphasized throughout the course are methodological issues germane to qualitative (and quantitative) research: reflexivity of the researcher, appropriate treatment of human subjects, and obtaining quality data. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 501

3 credits, Letter graded (A, A-, B+, etc.)

HPH 566: Clinical Trials

This course introduces the design, conduct, and analysis of clinical trials. Topics will include types of clinical trials, study design, treatment allocation, randomization and stratification, quality control, sample size requirements, patient consent, and interpretation of results.

2 credits, Letter graded (A, A-, B+, etc.)

HPH 575: Public Health Internship

This course is an applied internship in a public, not-for-profit, or private sector organization that provides a public health service. Students will gain practical public health skills through a semester long internship. The student will work in the organization and prepares a weekly journal of activities, as well as a paper at the conclusion of the course, applying program knowledge to the internship activities. Graduate Graded and may be repeated for credit. MPH Academic Coordinator consent required. Prerequisite: Admission to Graduate Public Health Program and Department Consent

*0-12 credits, Letter graded (A, A-, B+, etc.)
May be repeated for credit.*

HPH 580: Practicum

The Practicum is a planned experience in a supervised and evaluated public health-related practice setting. A journal of fieldwork and a project, with a written report, are required. Students will be expected to demonstrate their "capacity to organize, analyze, interpret and communicate knowledge in an applied manner." Health departments, as well as a variety of other local organizations, offer a wide array of potential sites for the Practicum experience. Permission of MPH Academic Coordinator is required. Prerequisite: Admission to Graduate Public Health Program and Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 581: Capstone

This course will assist students in synthesizing basic public health knowledge through completion of several competency-driven learning experiences. Most core and concentration course work must be completed before the student can participate in Capstone. Students will be introduced to the process of writing grant proposals and developing budgets, professional networking with non-academic community partners, publishing in the scientific literature; communicating practice-based projects in both oral and poster presentation formats, and planning for their future careers as public health professionals. They will self-assess their own conflict styles and apply negotiation and mediation skills to address community and/or organizational challenges, and reflect on their conflict styles when considering case studies. Students will also engage in inter-professional education learning activities to improve their understanding and communication of their roles, values/ethics, and how to work effectively as part of an inter-professional team. Students will apply systems thinking to a case study to create a logic model that demonstrates the complex systems involved in a population health issue. Lastly, they will present their own work as part of their Practicum to fellow students, and discuss career plans. Permission of MPH Academic Coordinator is required. Prerequisite: Admission to Graduate Public Health Program and Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 590: Research Practicum

The goal of Research Practicum is to mentor students to successfully complete their research requirements. Expectations are that students will register for Research Practicum for three consecutive semesters. The Research Practicum is a planned experience with expectations identified each semester in conjunction with a research mentor and faculty supervisor. A practicum proposal, analysis report, and final deliverable (NIH proposal, Foundation proposal, or peer reviewed publication) are required.

*0-9 credits, Letter graded (A, A-, B+, etc.)
May be repeated for credit.*

HPH 599: Maintenance of Matriculation

This course is for students who are maintaining matriculation while engaging in consultation with faculty regarding completion of courses and/or master's project. Students will be graded S/F. Prerequisite: Admission to Graduate Public Health Program and Department Consent

*0-3 credits, S/F graded
May be repeated for credit.*